Intra-segmental timing in sound change: /aw/ in Philadelphia

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Intra-segmental timing in sound change /aw/ in Philadelphia

Intro

Philadelphia [Labov et al 2013]

- 1900 /aw/ raising and fronting
- 1950 /aw/ lowering and backing

Formant Trajectories

Have been investigated with generation as a categorical variable. [Jacewicz, Fox & Salmons (2011)]

Wholistic measures compared against continuous variables. [Rudd & Kohn (2014)]

With GAMs, it is possible to model trajectories against continuous variables. [Wood (2006)]

Results

Formant trajectories

- Falling F2 & single F1 excursion at midpoint (diphthong?)

Vowel space trajectories

- F1 relative to F2

max F1 excursion

- Timing of F1 maximum shifts diachronically
- Target of F1 maximum is more stable

They interact with duration differently, over time

Conclusion

It is not straightforward to characterize /aw/ as a 2 part diphthong in Philadelphia.

Along with the shifts in vowel quality, there is a considerable shift in relative timing of vowel formant targets.

This puts /aw/ in line with some consonantal phonetic changes, such as Scottish derhoticization or Andalusian post-asperation.

Further directions

Evaluating and improving quality of automated full formant track extraction.

Incorporating more linguistic (nasals) and social (education) factors into analysis.

Are the F1 and F2 qualities used differently for linguistic or sociolinguistic perception?

References